



CALIFORNIA
ACADEMY OF
SCIENCES

Collecting and Observing

Chris Grinter

Overview

- Permits?
- Collecting Methods
- Curation, Labeling
- Observing
- Online Resources



A Note on Permits

- Collecting is frequently restricted. Always ask before swinging a net or setting a trap.
- Permit Only = National Parks, Wildlife Refuges, Nat. Monuments, Nature Reserves.
- Permit Usually = State Parks, County Parks, Private Land Trusts, Wilderness Areas.
- No Permit/Sometimes = National Forests, BLM land, Private land.

Collecting Methods

- UV Light – black light/mercury vapor, sheets or traps.
 - Many species come to light, but not all.
- Pheromones
 - Targeted, highly specific for a range of species
- Aerial Nets/visually hunting
 - Diurnal/crepuscular fliers.
- Baiting
 - Also works for bears
- Rearing
 - Very effective but time consuming.

Live Catch

- Live into vials/bags
 - Freshest specimens for spreading, great for micros.
 - Collected from sheets selectively
 - If you have relatively few specimens and can prep/spread them quickly. (or lots of vials)
 - Photographing/behavioral observations
 - Watch out for static problems
 - Escapees
 - Larger moths tatter themselves (must be kept dark)

Or Dead

- Killing Jars/Traps (Richard will Demo)
 - Ethyl Acetate, Ammonium Carbonate or Cyanide.
 - Traps work best with Acetate
 - Cyanide stiffens micros far too quickly, but make for reliable and strong jars.
 - Freezing/CO₂
 - It's easy to collect more specimens than you can immediately process and must relax.

Collecting

- UV/Black Lights



Live



Dead



© Chris Grinter 2013

Collecting

- HgVPR – Mercury Vapor



Live



Dead



Collecting

- HgVPR – Mercury Vapor
 - Type of bulb matters
 - Clear, 160w – 1000w (ridiculous)
 - Self ballasted vs. external ballast
 - HgVPR/NaVPR/Metal Halide?
- Usually used in conjunction with a blacklight.

Collecting

- Bucket Traps (8w, **15w**, 30w)



vs.



Collecting

- Bucket Traps



Collecting

- Traps DO work for micros!



Even in here

Collecting

- But not all the time...



Collecting

- Pheromone Traps

Sticky = for Ag./control

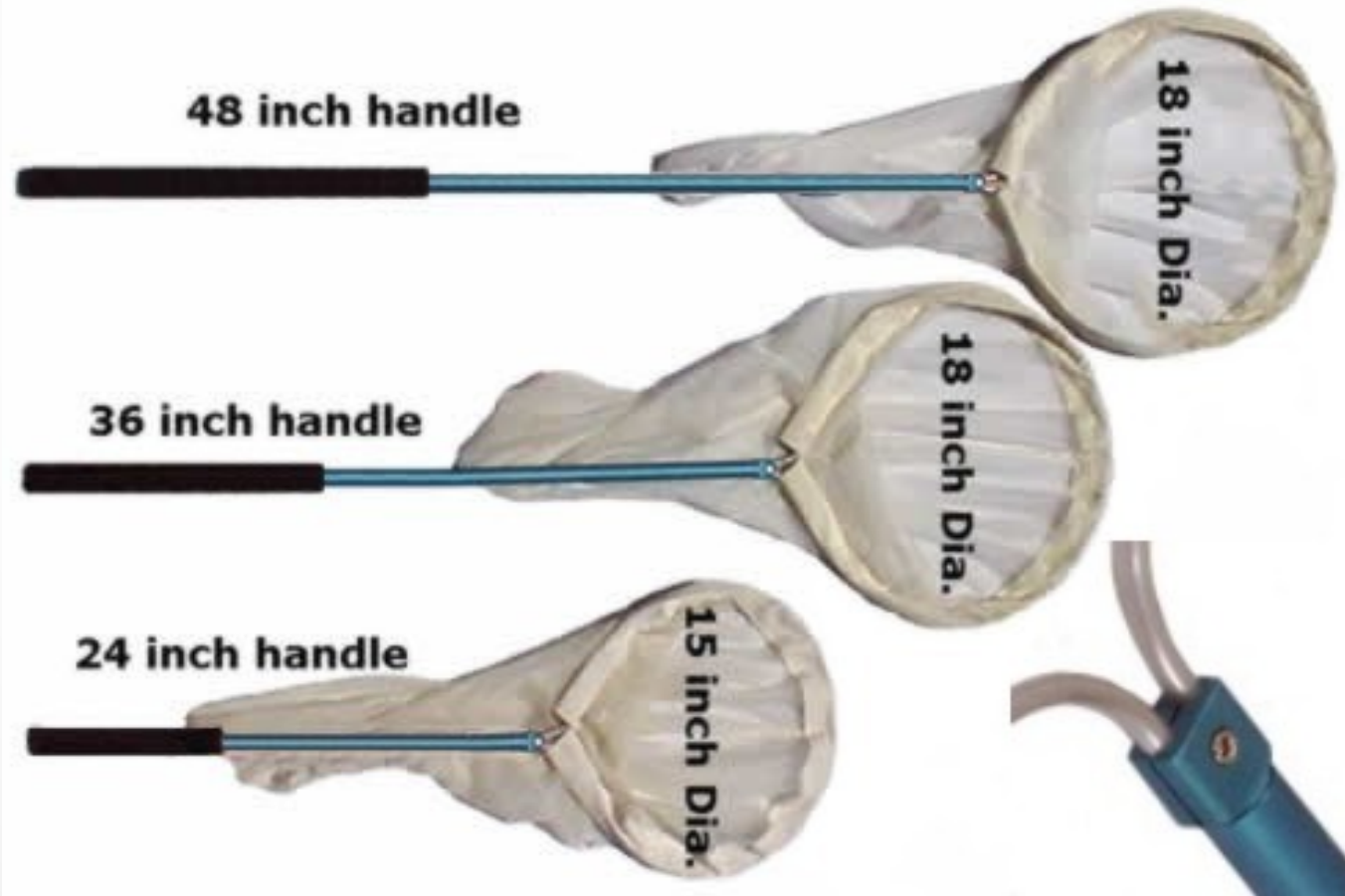


Dry with Acetate/Cyanide



Netting

- The trusty butterfly-net



Baiting/Sugaring



Rearing

- Rearing is wonderful – combines host, adult and parasitoid biology



Chris Ginter

OR



Keep your parasitoids!

Rearing

Erigeron annuus

Agromyzidae



Charley Eisman – BugTracks

Parectopa plantaginisella (Gracillariidae)

© Charley Eisman

Rearing

Beat Sheets for free-roaming caterpillars



Rearing

Visually Hunting!



Rearing

Bags will do, or vials



Pinning

- Field-Pin the micros right away!



Pinning

- Field-Pin the micros right away!



Right-side up or
upside down



Pinning

- Field-pinned macros are ideal



Spreading

- Spread them fresh if you can.



Specimen Curation

- Properly Pin/Spread/Store your specimens
 - Label everything, every time, every chance you get.
 - Keep field notes
 - Use proper size pins in the first place
 - Rely on freezing your collection for pest-control, or Naphthalene in small doses if you have to.

Proper Labeling



USA: Arizona, Pima Co.,
Buenos Aires Nat. Wildlife
Refuge. Alamito Canyon. 3mi
NW of Arivaca. 31°35'53.08"N,
111°22'2.21"W, 1089m,
29-31 July 2008, B.L. Trap.
C. Grinter, P. Jump.



Observing

- Close-focus binoculars (even at sheets)



Observing

- “If you’re not collecting, a pair of binoculars will save you lots of moths in your face.”



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Observing

- Macro lens/diffuser



Observing

- Macro lens/diffuser



Observing

- Live-capture for staged photographs



Observing

- Share your observations!



Welcome!

to **iNaturalist.org**, where you can **record** what you see in nature, **meet** other nature lovers, and **learn** about the natural world.

North American
Moth Photographers Group
at the

Mississippi
Entomological at
Museum

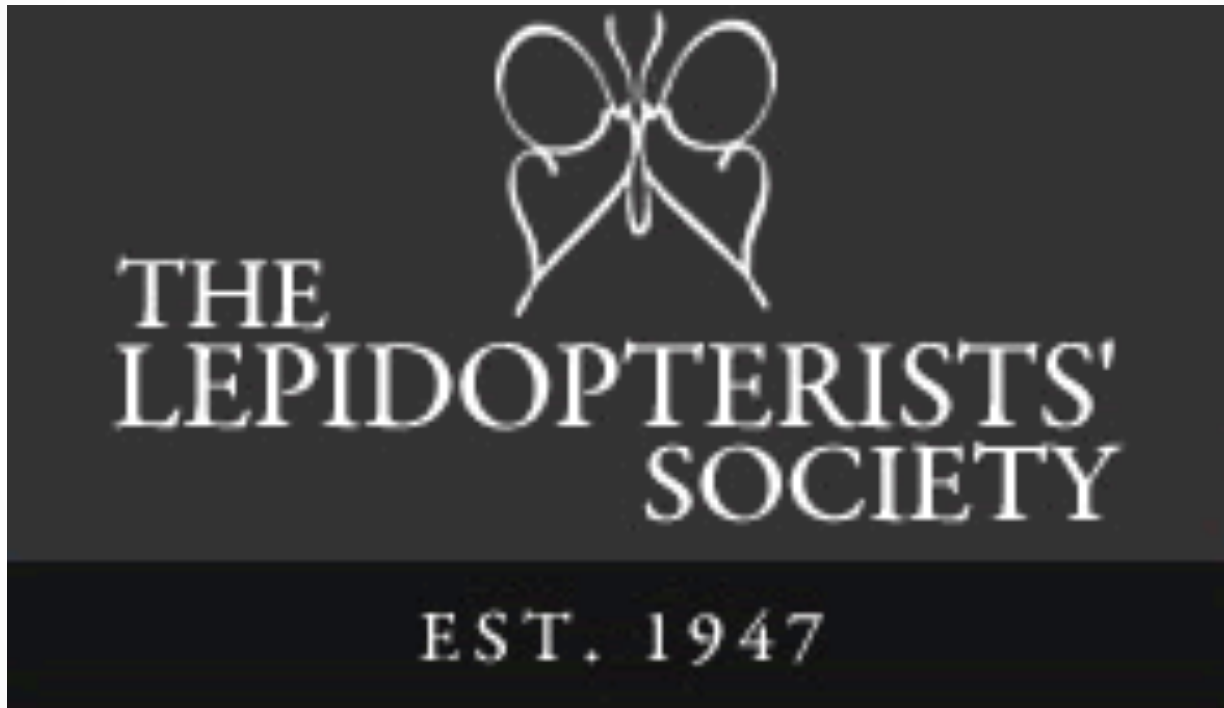
Mississippi State
UNIVERSITY

Digital Guide to Moth Identification



Observing

- Join the Lepidopterists' Society! (email me)



Let's collect!

Stathmopodidae by Paul Bertner

